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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,794	12/08/2003	Chung-Hee Chang	146712002020	8942

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EXAMINER

RICKMAN, HOLLY C

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 06/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/728,794

Applicant(s)

CHANG ET AL.

Examiner

Holly Rickman

Art Unit

1773

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 11-20 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23 is/are allowed.
- 6) ☒ Claim(s) 1-10, 21 and 22 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The objection to the drawings is withdrawn in view of Applicant's submission of a corrected drawing.

Claim Interpretation

2. Claim 6 has been interpreted to mean that the seedlayer is merely *capable* of changing the magnetostriction of the underlayer.

Double Patenting

3. The rejection of claim 9 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6709773 is withdrawn in view of the filing of a terminal disclaimer.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 4-8, 10 and 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Mallary et al. (US 5226966).

Mallary et al. disclose a perpendicular magnetic recording disk for use with a magnetic recording head. The disk has a NiP-plated substrate. It is the Examiner's contention that the NiP functions as the non-magnetic seedlayer in the instant case. A soft magnetic layer formed from permalloy is deposited on the NiP layer and a perpendicular magnetic layer is deposited thereon. The reference teaches that the soft magnetic underlayer has radial anisotropy. Furthermore, Mallary et al. teach that the soft magnetic underlayer is "typically 16 to 20 micro-inches thick" (col. 2, lines 20-22). Sixteen microinches is equal to about 406nm. It is the Examiner's contention that one of ordinary skill in the art would recognize that 406 nm is within the scope of "about...400 nm" as required by claim 10.

The limitation requiring that the "underlayer without the seedlayer is isotropic and the seedlayer induces anisotropy in the underlayer" has been fully considered but does not appear to patentably distinguish the claimed structure over the prior art. This limitation is directed to a method of inducing anisotropy in the underlayer, which is essentially a process limitation in an article claim. It has been held that even though product-by-process claims are limited and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

The recitation that the "underlayer without the seedlayer is isotropic" does not structurally or compositionally distinguish the claimed seedlayer over the seedlayer taught by Mallary et al. The examiner takes the position that the underlayer taught by Mallary et al. would

Art Unit: 1773

be capable of being isotropic in the absence of the seedlayer because it is formed from one of the materials disclosed by Applicant and has a thickness which is substantially the same as that claimed by Applicant. Thus, it appears to be structurally and compositionally the same as the claimed layer and therefore, would be expected to exhibit the same properties.

The soft magnetic layer taught by Mallory provides a flux return path for the magnetic head as required by claim 4. The examiner maintains that the limitations of claims 5-6 are inherently met by Mallory by virtue of the fact that Mallory discloses substantially the same structure as claimed and therefore, would be expected to exhibit the claimed properties.

It has been held that where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the burden of proof is shifted to applicant to show that prior art products do not necessarily or inherently possess characteristics of claimed products where the rejection is based on inherency under 35 USC §102 or on prima facie obviousness under 35 USC §103, jointly or alternatively. *In re Best, Bolton, and Shaw*, 195 USPQ 430. (CCPA 1977).

Claim Rejections - 35 USC § 102/103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1773

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mallary et al., as applied above, in view of Shimizu et al. (US 2002/0012816).

Mallary et al. teach all of the limitations of the claims except for the use of the specific soft magnetic materials claimed. Instead, Mallary et al. disclose a magnetic recording medium having a soft magnetic layer formed from a CoZrNb alloy.

Shimizu et al. teach the equivalence of CoZrNb and permalloy for use as underlayers in perpendicular magnetic recording media (p. 4, paragraph [0079]).

It would have been obvious to one of ordinary skill in the art at the time of invention to substitute permalloy for the CoZrNb alloy taught by Mallary et al. in view of Shimizu's teaching of the functional equivalence of the two materials.

Allowable Subject Matter

8. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Claims 9 and 23 are allowable over the closest prior art to Mallary. Mallary fails to teach or suggest the claims limitations directed to a seedlayer formed from CoCr or a CoCr alloy.

Response to Arguments

10. Applicant's arguments filed 4/10/06 have been fully considered but they are not persuasive.

Applicant argues that Mallary fails to inherently meet the claim limitation directed to a soft magnetic underlayer having radial anisotropy induced therein by the underlying seedlayer. In support of this position, Applicant has submitted a declaration under 37 CFR 1.131. It is noted that the declaration also includes discussion relating to "Ando." The claims in the present case are not rejected over Ando and therefore, these remarks in the declaration have not been considered.

The declaration sets forth a single example using a specific NiFe alloy having a specific thickness. The graph shown in the declaration shows a hysteresis loop having numerous data points, some of which show radial anisotropy and some which show circumferential anisotropy. The declaration notes that "permalloy is circumferentially anisotropic when deposited on Al/NiP substrates."

It is not clear to the examiner from the minimal explanation given that the figure established that permalloy is circumferentially anisotropic on Al/NiP. Furthermore, even if Applicant can show that the graph would be interpreted in this manner, only one example is given of a very specific material, Ni₇₅Fe₂₅ having a specific thickness (200 nm). Mallary is not limited to these specifics nor are the present claims. Thus, Applicant's data is not representative of the closest prior art to Mallary, nor is it commensurate in scope with the claims.

For the foregoing reasons, the rejections over Mallary have been maintained.

Art Unit: 1773

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (571) 272-1514. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1773

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Holly Rickman", with a stylized flourish extending to the right.

Holly Rickman
Primary Examiner
Art Unit 1773